recorded in appropriate sequence to form a raster. To accomplish the recording, each pixel is first singled out (addressed). Thus, the conventional recording procedure in general can be subdivided into two parts: a) the physical processes used for converting light information into electric signals, b) the manner in which the individual pixels are addressed while recording.

The subject invention is directed to a raster that is different from the conventional raster of the type described above. According to the Specification of the subject application (page 17, lines 13-15; page 23, line 16 to page 24, line 6), in addition to the previously described conventional type of a raster, there can be special raster types having as the elements "different masks". The latter can be, for example, "two periodic" corresponding functions, such as orthogonal transformation (OT) basic functions, as described in the Specification. OT is a technique for compression/decompression of signals. Raster elements of an OT may be called functional elements and each such functional element corresponds to an array of pixels. The term "element" is used because the whole picture, as previously noted, is formed as the sum of such elements. This explains the meaning of the terms "raster" and "element" as used in the Specification.

The subject application describes two distinct addressing methods (provided by different devices):

1. Addressing by fragments (an array of pixels) — for example, in the case of forming an image of two dimensional fragments, the fragments of the image

are successively formed by a matrix display and then shifted to the proper place of a displaying plane. This is a procedure illustratively performed as described in the application by a device having a deflector, an active element whose deflection angle changes with time according to some law or applied signals. Here, the two dimensional fragments are formed in succession, one by one, on the displaying plane (page 11, line 7 to page 16, line 15 of the Specification).

2. Addressing by multiplying the image forming structure (IFS) (raster) — Here, the raster is divided into a number of parts. Each part is delivered to an appropriate part of the display plane to be modulated to form an image fragment. This is provided by a device having, in the case of optic image forming structure (IFS), a light multiplying matrix. This is a passive means that multiplies light (subdivides into several components with appropriate intensities) and projects them at predetermined angles onto the display plane. Here, the two dimensional fragments of the image are illustratively formed in parallel, on the displaying plane (page 18, line 1 to page 20, line 10 of the Specification).

Again, in the present invention, a "raster element" is a series of pixels. The "elements" are combined to produce a two dimensional "fragment". According to the Specification (page 17, lines 13-15; page 23, line 16; page 24, line 6), raster elements may be an array of dots so that each element is addressed in the same manner that one pixel of an image are addressed in a conventional system. Also, in the invention, all elements are space-time separated, i.e., activated one by one to be

time separated, and do not overlap, space separated.

The raster elements also can be two periodic functions (Walsh, Fourier, etc.) used for image plane compression/decompression via orthogonal transformation (OT). In this case, each element as addressed includes an array of pixels addressed at the same time. The elements (array of pixels) are in general just time separated, i.e., activated one by one, but some as well can overlap. The use of such elements, that also can be called "functional elements", entails forming/recording an image via a direct procedure of image decompression/compression, a technique that affords great practical advantage.

Original claims 1-7, 10-19, 21 and 22 were rejected over Furness, III, et al., U.S. 5,467,104, and claims 1-4, 8, 10-15 and 19-24 over Pu, et al., U.S. 5,483,365.

The original claims are replaced by a new set of claims. The new claims are directed to the technique discussed under Point 2 above. Referring to claim 25, for example, the following terms are used:

(a) "raster elements" = elements (constituent parts) of an optic raster. This term also is used to describe an untraditional manner of picture forming so that one element corresponds to an array of pixels.

(b) "Fragments of image" = a two dimensional constituent part of an image to be formed (e.g., a 2x2 cm part comprises a fragment of a 9x13 cm photograph).

(c) "Blocks of an image" = the same meaning as "fragments of image".

(d) "an array of . . . modulating element" = elements (constituent parts) of a device that modifies (amplifies or minimizes) light intensity, color, etc., in accordance with characteristics of pixels.

(e) ". . . modulating raster elements in each block . . .". Here "block" = part of the device that forms a fragment of an image as a whole.

In claim 26, "light dividing element" = constituent parts of a device used for multiplying raster elements.

Considering the cited prior art, the new claims are directed to the type of image formation discussed above under 2. According to Furness, a matrix display forms a block of an image which is then shifted by a deflector to form an image in a successive manner. While perhaps this can be said to be somewhat analogous to technique 1. discussed above, the new claims are directed to technique 2. described above.

According to the Specification (page 17, lines 13-15), image forming by successive block addressing can be performed via forming on a block display different scanning masks (functional elements), corresponding to different functions used for signal compression/decompression. This allows forming an image via transformation - a procedure not at all disclosed or suggested by Furness.

The patent to Pu relates to a method for holographic storage in which a

signal beam produced by matrix display is rotated relative to the recording medium through a succession of peristrophic multiplexed angles, i.e., deflected by an active deflector in a successive manner. This procedure with some modification also possibly can be considered to be analogous to the technique discussed under 1. above. There is a difference between what is described in Put and what is described in the Specification of the subject application. As to the use of a holograph, Pu describes a procedure for storing an image produced on display 50 in the form of a hologram. The manner of image forming used by Pu is analogous to that used in photography: two coherent beams - signal and reference - are used. The signal beam interferes with the reference beam and forms a hologram on a recording medium. When a hologram is lighted with a reference beam, a 2-D image appears corresponding to that produced on the display.

In the Specification of the application, a procedure is described for synthesizing a hologram (page 20, line 20 to page 23, line 15). A light beam is modulated by applied signals to form an interference type image (2-D image). When lighted by an image restoring light (analogous to Pu's reference beam) a holographic (i.e., 3-D) image is produced that is not similar to that produced by an image forming light, as used by Pu. Therefore, the method for synthesizing a hologram, according to the present invention, is different from that disclosed in Pu.

Prompt and favorable action is requested.

Respectfully submitted,

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